

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Class B Recesses for Light Fittings, Ventilation Units and similar**

with type designation(s)

F(LE)F-2180S-B0, FL(LE)F-2360S-B0, DNL-LEC15-S-B0, DNL-LEC15-L-B0

Issued to

**WOOSHIN APEC CO.,LTD. (Gimhae Plant)
Gimhae-si, Gyeongsangnam-do, Republic of Korea**

is found to comply with

DNV GL offshore standards**DNV GL rules for classification – Ships****DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations****Application :****Approved as light fixtures for use in B-0 class ceilings.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2019-09-17**This Certificate is valid until **2024-09-16**.for **DNV GL**DNV GL local station: **Gimhae Station**Approval Engineer: **Joanna Kowalczuk****Mårten Schei-Nilsson
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Product description

Light fixture of type: "F(LE)F-2180S-B0", "F(LE)F-2360S-B0", "DNL-LEC15-S-B0" and "DNL-LEC15-L-B0"
Light fixtures installed in cut-outs in B-0 ceilings. The light fixtures are composed of 0.6 mm galvanized steel plate insulated with mineral wool with density of 60 kg/m³ (manufactured by KCC) and fastened to the ceiling with self-drilling screws.

For further details, see drawings listed under Type Approval documentation below.

Application/Limitation

Approved for use in B-0 ceiling (see details above).

Maximum width of panels: 300 mm

The arrangement is subject for approval in each case.

Light Fixture type	Maximum size (L x W x H)	Maximum weight
F(LE)F-2180S-B0 (FF2181S-B0, FF-1180S-B0, FF1181S-B0, FF-3180S-B0, FF3181S-B0, LEMF-1250S-B0, LEMF-1251S-B0, LETF-2110S-B0, LETF-2111S-B0, LETF-1110S-B0, LETF-1111S-B0, LETF-3110S-B0, LETF-3111S-B0)	220 x 733 x 100 mm	4.1 kg
F(LE)F-2360S-B0 (FF2361S-B0, FF-1360S-B0, FF1361S-B0, FF-3360S-B0, FF3361S-B0, LEMF-2250S-B0, LEMF-2251S-B0, LETF-2180S-B0, LETF-2181S-B0, LETF-1180S-B0, LETF-1181S-B0, LETF-3180S-B0, LETF-3181S-B0)	220 x 1343 x 100 mm	7.4 kg
DNL-LEC15-S-B0 (DNL-LEC15S-S-B0)	ø122(210) x 307(440) x 107(175) mm	4.1 kg
DNL-LEC15-L-B0 (DNL-LEC15S-L-B0)	ø177(210) x 353(440) x 111(175) mm	4.5 kg

Minimum distance between the recesses should not be less than 200 mm.

The manufacturer of ceiling is responsible to document that the structural and thermal integrity is maintained after fitting the light fixtures into the ceiling. The arrangement is subject for approval in each case.

Each product is to be supplied with its manual for installation and use.

Type Approval documentation

Tests carried out

Tested according to IMO 2010 FTP Code part 3.

Marking of product

The product is to be marked with name of manufacturer, type designation and fire technical rating.

Periodical assessment



Job Id: **262.1-031227-1**
Certificate No: **TAF000019E**

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Class Programme DNVGL-CP-0338, Section 4.